

STATE OF UTAH
UNDERGROUND INJECTION CONTROL PROGRAM
CLASS I NON-HAZARDOUS WASTE
INJECTION WELL

PERMIT APPLICATION PACKAGE

Last Revised 2/25/2004

Table of Contents

<u>Contents</u>	<u>Page</u>
<u>General Instructions</u>	3
<u>Procedural Information</u>	5
<u>Application for Injection Well Permit</u>	Permit Application Page - 1
<u>Technical Report Outline</u>	Technical Report Outline Page - 1
1. <u>Artificial Penetrations Map</u>	1
2. <u>Piezometric Map</u>	1
3. <u>Injection Zone Artificial Penetrations</u>	1
4. <u>Additional Information for Injection Zone Artificial Penetrations</u>	2
5. <u>Corrective Action Plan</u>	2
6. <u>Geology</u>	2
7. <u>Geohydrology</u>	3
8. <u>Characteristics of Injectate</u>	3
9. <u>Construction Plan</u>	4
10. <u>Wellhead Installations</u>	5
11. <u>Other Subsurface Operations</u>	6
12. <u>Injection Well Operation</u>	6
13. <u>Baseline Ground Water Analyses</u>	7
14. <u>Ground Water and Injectate Monitoring</u>	7
15. <u>Abandonment Plan</u>	7
16. <u>Financial Responsibility</u>	7

Attachments:

[Artificial Penetration Review \(Form\)](#)

[Applicable Federal Regulations](#)

GENERAL INSTRUCTIONS

The Underground Injection Control (UIC) Rules authorize the injection of fluids (UAC R317-7). The following instructions outline the procedures, documents, and information needed for a Class V well permit application.

1. The applicant shall submit an original Permit Application and a Technical Report. Both documents are to be submitted in triplicate to the:

Utah Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

ATTN: Ground Water Protection Section

Telephone inquiries: (801) 538-6146

2. **Signature on Application:** The person who signs the application form will often be the applicant; when another person signs on behalf of the applicant, his/her title or relationship to the applicant should be shown in the space provided. In all cases, the person signing the form should be authorized to do so by the applicant. An application submitted by a corporation must be signed by a principal executive officer of at least the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the activity described in the form originates. In the case of a partnership or a sole proprietorship, the application must be signed by a general partner or the proprietor, respectively. In the case of a municipal, state, federal or other public facility, the application must be signed by either a principal executive officer, ranking elected official or other duly authorized employee. The Division shall require a person signing an application on behalf of an applicant to provide proof of authorization (40 CFR Part 144.32).
3. An application will not be processed until all information required to properly consider the application has been obtained. When an application is severely lacking in detail or the applicant fails to submit additionally requested information in a timely manner, the application may be returned.

4. An application which involves the injection of a fluid containing radioactive materials shall be accompanied by a letter or other instrument in writing from the Utah Division of Radiation Control, stating that either the applicant has a license from the Division of Radiation Control governing the disposal of radioactive materials; or that the applicant does not need a license. In the case of radioactive materials disposal, the Division of Radiation Control must receive a copy of the application for an injection permit. The copy should be mailed to:

Utah Department of Environmental Quality
Division of Radiation Control
168 North 1950 West
Salt Lake City, Utah 84114-4850

5. The Attachment contains some of the federal regulations adopted by Utah that will also be considered in evaluating the permit application. The federal regulations included are only a portion of those applicable to underground injection activities, and are provided as reference to assist in the preparation of the permit application. The complete federal regulations covering underground injection can be found in the Code of Federal Regulations (CFR) Title 40 with updates available in the Federal Register.

PROCEDURAL INFORMATION

The staff will review the application for completeness. During the completeness review, the applicant may be contacted for clarification or additional information. When all pertinent information is present, a notice that an application has been received may be given to other state agencies and local governmental entities interested in water quality control and industrial waste management. A draft permit that may include a Statement of Basis will be prepared by the Division and transmitted to the applicant for review. Comments from the applicant may result in changes to the draft permit, after concurrence by the Executive Secretary. After Executive Secretary approval, the draft permit will be subjected to public comment and/or a public hearing. In either case, a notice will be provided to inform the public that a draft permit has been prepared.

Requirements for the public notice include:

1. That a public notice be published for each draft permit, permit amendment, or permit renewal that has been prepared. The notice will appear within each county where the proposed facility or discharge is located and each county affected by the discharge.
2. The Executive Secretary will mail notice of the application to affected persons and certain governmental entities.

A public hearing will be scheduled regarding an application when requested by the Water Quality Board (Board), the Executive Secretary, the applicant, or any affected person within thirty (30) days following newspaper publication.

The Board may act upon a permit application, a draft permit, permit amendment, or renewal of a permit without holding a public hearing when:

1. Adequate public notice and comment period has been provided, including: (a) notice of the application has been mailed to persons possibly affected by the proposed permit; (b) notice has been published at least once in a newspaper, regularly published or circulated within each county where the proposed facility or discharge is located and in each county affected by the discharge; and
2. Within thirty (30) days following publication of the Board's notice the Executive Secretary, the applicant, or an affected person has not requested a public hearing; or
3. An application to amend a permit will result in an improvement of the quality of the fluid authorized to be injected and if the applicant does not seek to increase significantly the quantity of fluid to be injected or to change materially the pattern or place of injection.

After resolution of any public comment the Executive Secretary shall issue or deny the draft permit, permit amendment, or permit renewal. Within thirty (30) days of issuance, a copy of the permit or permit denial will be mailed to the applicant.

The information required in 40 CFR 146.14 will be considered by the Executive Secretary before authorizing Class I Non-Hazardous Waste injection wells.

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
Division of Water Quality
Underground Injection Control Program

PERMIT APPLICATION TO DISPOSE OF NON-HAZARDOUS WASTE
IN A CLASS I INJECTION WELL

1. Type of Permit Application (check one)

- ☐ Initial Application
- ☐ Permit Renewal, Original Permit No. _____
- ☐ Permit Modification, Original Permit No. _____

2. Type of Permit (check one)

- ☐ Individual Well Permit
- ☐ Area Permit

3. Applicant (must be the operator if owner/operator are different):

Name: _____
(Individual, Corporation or Other Legal Entity)

Address: _____
(Permanent Mailing Address)

City: _____ State: _____ Zip: _____

Telephone Number: _____

4. Facility owner:

Name: _____
(Individual, Corporation or Other Legal Entity)

Address: _____
(Permanent Mailing Address)

City: _____ State: _____ Zip: _____

Telephone Number: _____

5. Facility status: Federal _____ State _____ Private _____
Public _____ Other _____
(Indicate)
6. List those persons or firms authorized to act for the applicant during the processing of the permit application. Include a complete mailing address and telephone number:
7. List all activities presently conducted by this facility which require an environmental permit:
8. List all environmental permits or construction approvals received or applied for relevant to this facility or this location (do not include this permit application):
9. Type of operation(s) producing the proposed injectate (include appropriate SIC Codes):

10. Location of Proposed Injection Operation

Facility name: _____

Facility mailing address: _____

Facility location: _____

Street address: _____

City: _____

County: _____ Lease: _____

No. of Wells* : _____

Township; Range; Section; and 1/4, 1/4 Section: _____

Latitude: _____ deg _____ min _____ sec North

Longitude: _____ deg _____ min _____ sec West

Survey: _____ Abstract: _____

* Location(s) of injection well(s) should be identified on all maps, including those maps required by the Technical Report.

11. Are the proposed injection well(s) located on Indian land? ☐ Yes ☐ No

12. Proposed Injection Program:

a. Source(s) and type(s) of injection fluid(s):

b. Type(s) of injection well(s) (borehole, drainfield, gravel filled pit, etc.):

c. Elevation of drill collar:

d. Total depth(s) of well(s) measured from the drill collar:

e. Depth(s) of screened interval(s) measured from the drill collar:

f. Wellhead locations: Well I.D. Surface or Subsurface?

g. Geologic name(s) of formation(s), member(s), or submember(s) of the lithologic unit(s) in which injection will occur. Include depth(s) from surface.

h. Proposed Annual Injection Volume (Acre-Feet):

Well ID: _____ Average: _____ Maximum: _____

i. Proposed Injection Rate (Gallons Per Minute):

Well ID: _____ Average: _____ Maximum: _____

j. Proposed Injection Pressure (PSI):

Well ID: _____ Average: _____ Maximum: _____

13. An application map or maps, depicting:

a. The approximate boundaries of the tract of land on which the injection well activity is or will be conducted.

- b. The location of the injection well(s) relative to facility boundaries and to adjacent survey lines. Indicate distance (in feet) and direction from two adjacent survey lines.
- c. The general character of the areas adjacent to the place or places of injection such as residential, commercial, recreational, agricultural, undeveloped, etc.
- d. The boundaries and ownership of tracts of land adjacent to the facility boundaries. Include, with the map a list containing the names and mailing addresses of the owners of the tracts of land adjacent to the facility boundaries keyed to the map.

14. Name(s) and Address(es) of Surface Owner(s) [attach additional sheets if necessary]:

15. On an attached sheet(s), list the names and mailing addresses of persons or parties that may be effected by the injection operation; e.g. adjacent property owners, mineral lease owners, water right owners, nearby municipalities and other governmental bodies or installations.

16. The names and mailing addresses of persons identified as affected parties, were obtained from:

(Source: City, County, School or Water District Records or Abstract Co.)

17. Provide a separate list of owners of mineral interests in the tract of land on which the well will be drilled and include a complete mailing address for each. Include other mineral interests that could be affected by contaminant movement over the life of the project.

18. Submit the Technical Report with Application.

19. Certification of submitted information.

(Name of Company Official: Type or Print Legibly)

(Title)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Date: _____

SUBSCRIBED AND SWORN to before me this _____ day of _____, 20____.

My commission expires on the _____ day of _____, 20 ____.

Notary Public in and for

County, Utah

(SEAL)

TECHNICAL REPORT OUTLINE FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELL APPLICATIONS

Applicants should consult with Underground Injection Control (UIC) staff prior to initiating an application for an injection well permit to determine: (1) if the fluid is a prohibited waste and (2) to review the detailed information to be developed for the Technical Report.

Justification for subsurface injection, in the form of treatability studies or alternate methods of fluid disposal, must accompany the application. Explain, in detail, why each method is considered less satisfactory in terms of environmental protection than the proposed subsurface injection method. Indicate whether fluid is presently being produced, and if so, what method is currently used in its disposal. Describe, in detail, the manufacturing process(es) and product(s) from which fluid will result.

A Technical Report, prepared under the direction of a professional geologist or engineer, containing as a minimum the following information must be submitted as an attachment to the application. The UIC staff, upon demonstrating justifications, may make adjustments in the requirements set forth in this Technical Report Outline. References in parentheses refer to regulations in the Code of Federal Regulations that apply to the associated data requirements.

Items required for inclusion in the technical or engineering report are (40 CFR 144.31, and 146.14):

1. A map indicating the location of all injection and drinking water well on the property and extending two (2) miles beyond the property adjacent to the facility, along with a tabulation of well depth, water level, owner, chemical analyses, and other pertinent data keyed to the map. If no wells exist on the plant property or property adjacent to the plant, provide the above-listed data for a minimum of three selected wells within a two (2) mile radius of the proposed well. The map should show surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features.
2. A piezometric map of all ground water in the area (confined and unconfined) using information from wells near the proposed injection well(s). This map must also show the vertical and lateral limits of Underground Sources of Drinking Water (USDWs), i.e., Total Dissolved Solids (TDS) are less than 10,000 milligrams/liter. Include the position of these sources relative to the injection formation, direction(s) of ground water flow and an estimate of average linear velocity for each ground water system present.
3. A map showing the location and depth of all artificial penetrations (oil and gas wells, exploratory test wells, injection wells, plugged and abandoned wells, etc.) within a two (2) mile radius of the proposed injection well and that completely penetrate the upper confining zone and into the injection zone.

4. For those wells, boreholes, etc. noted in (3) above; provide the following additional information:
 - a. A tabulation of: operator; leasor; owner; well ID; well type; date drilled; distance from proposed injection well(s); casing size; setting depth and cementing data for surface, intermediate, and long string casings; and plugging data for the abandoned wells. In addition to this information, copies of available casing and cementing records shall be submitted including the appropriate State forms and cementing affidavits. The methods used to locate and define the condition of these wells must accompany the permit application. Tabulation shall be keyed to map in (3) above.
 - b. A cross-section schematic of all artificial penetrations requested in (3) above. See attached Artificial Penetration Review Form.
5. A proposed Corrective Action Plan for all wells, boreholes, etc. within the area of review which t completely penetrate the upper confining zone and into the injection zone and are not properly constructed or plugged.
6. Description of local topography and geology pertinent to the injection program sufficient to demonstrate that injection or waste movement will not endanger a USDW. This information shall include but is not limited to:
 - a. A USGS topographic map (1:24,000 scale, if available), or other map if the topographic map is unavailable, extending two miles beyond the property boundary; depicting the proposed injection well(s), the property boundaries, the facility and its intake and discharge structures; any hazardous waste treatment, storage and disposal facilities; existing injection well(s); and wells, springs, surface water bodies and drinking water wells listed in public records or otherwise known.
 - b. Surface geologic map and cross-sections on a scale necessary to depict the local and regional geology of the area. Indicate the location of the injection well(s) on the geologic map.
 - c. Two cross-sections perpendicular to each other crossing at the proposed injection location. These cross-sections will include, at a minimum, all available log control, geologic units structure and lithology that occur between the surface and the lower confining bed below the injection zone. If a major structure exists below the injection zone, the sections will be projected to as deep as necessary to show the structure. All aquifers and their water quality must be identified, including the base of 3,000 mg/l and 10,000 mg/l TDS water. At a minimum, these cross-sections shall be drawn at a scale sufficient to depict detailed local geology within a two (2) mile radius around the injection well.
 - d. Parameters of upper and lower confining strata (lithology, permeability, etc.) for all USDWs present and the injection zone.

- e. Description of faulting and fracturing or lineations in the area (vertical stereo aerial photos with lineation interpretations are suggested). Detailed descriptions should be given for faults and fractures that intersect the confining zones.
 - f. Depositional, structural and tectonic (seismic) history of the area including lithology and hydrologic properties of all units penetrated by the proposed well.
 - g. Structural contour map on top of the proposed injection zone.
 - h. Isopach map of the injection zone. (Between major confining zones.)
 - 1) Isopach of permeable zone within injection zone.
 - 2) If more than one zone is being requested, isopachs of each permeable zone.
7. Geohydrology - Reservoir Mechanics of Injection Interval (give sources of information):
- a. Porosity, hydraulic conductivity, transmissivity and temperature.
 - b. Natural reservoir pressure (bottom-hole pressure) or hydrostatic head; fluid saturation, chemical and physical characteristics of formation, and formation fluids.
 - c. Location, extent, and effects of known or suspected faulting, fracturing and/or formation solution channels.
 - d. Fracture gradient or formation breakdown pressure of injection zone and all confining beds.
 - e. Piezometric surface map of receiving strata.
8. Characteristics of Injectate:
- a. A detailed description of the chemical, physical, radiological and biological characteristics of the fluids to be injected. Complete chemical analyses of all inorganic constituents reported in ppm or mg/l. If organic fractions are present, all such constituents shall be reported in ppm or mg/l, as individual percentages by weight, or in other appropriate terms. Give analysis of each individual fluid stream and its percentage of total injection volume. Data on the toxicity and degradability rates and levels are required on final composite injection stream. Injected fluid will be analyzed, using an approved method to assure no hazardous wastes listed in 40 CFR 261.20 are injected.
 - b. Compatibility of proposed injection fluid, formation and formation fluids (detailed testing required) at expected pressures and temperatures.
 - c. Corrosion test on all facilities that will be in contact with the injection stream, including

any long string casing.

- d. The anticipated average and maximum rate of injection in gallons per minute and gallons per month. Estimate the yearly volume of injected fluid and the anticipated life of the project (show calculations).
9. Detailed outline of construction and completion of the proposed injection wells (all new materials required unless otherwise approved by the Executive Secretary) (40 CFR 146.12):
- a. Wellhead elevation and total well depth relative to wellhead.
 - b. Type of completion: perforation, open hole, screen, etc.
 - c. Type, size, weight, grade and setting depth of all casing strings (API standards). Indicate compatibility of casing material with proposed injectate.
 - d. Proposed cementing procedures and type of cements, including volumes, additives, slurry weight, etc. (Sufficient cement shall be used to circulate to the surface plus a minimum of 20% excess.) Submit service company recommendations along with studies to determine the suitability of the selected cements.
 - e. Cementing technique and equipment: guide shoe, float collar, plugs, baskets, DV tools, etc.
 - f. Proposed injection interval(s) and perforating or screen setting depths. This should include the interval(s) to be utilized initially and the entire zone required for future development.
 - g. Number and location of centralizers, wall scratchers, etc.
 - h. Size and type of tubing and proposed setting depth.
 - i. Size and type of tubing packer and proposed setting depth.
 - j. Diagrammatic sketches of well, wellhead facilities, and any annulus monitoring system.
 - k. Proposed well stimulation program, acidizing, hydraulic fracturing, etc.
 - l. Description of proposed injectivity tests (i.e., permeability, reservoir limits, reservoir types, etc.)
 - m. Proposed open hole and cased hole logging, bottom-hole testing, coring, etc. Minimum logging requirements will be set by technical staff.

1) Surface Casing

- a. Resistivity Log, Spontaneous Potential Log, and Caliper Log before the casing is installed; and
 - b. Cement Bond, Temperature or Density Log after the casing is set and cemented.
- 2) Bottom of Surface Casing to Total Depth
 - a. Spontaneous Potential, Resistivity, and Caliper Log.
 - b. Gamma Ray (full hole).
 - c. Porosity Log.
 - d. Fracture Finder Log.
 - e. Directional Survey.
 - f. Cement Bond Log, Temperature Log, or Density Log after casing is set and cemented.
- 3) Injection Zone, Confining Zone and Others as Directed
 - a. Full diameter cores from selected intervals. If full diameter coring is not feasible or core recovery is not adequate, sidewall cores will be taken.
 - b. Bottom Hole Pressure and Temperature Logs.
 - c. Formation Sample.
 - d. Other tests needed to provide required injection zone characteristics.

10. Wellhead Installations:

- a. Description of pressure and volume monitoring systems for injection and annulus systems.
- b. Description of filters including type, capacity and capability.
- c. Description of injection pumps including type and capacity.
- d. Detailed description of any pre-injection treatment process and facilities, including a flow diagram with each injection stream identified along with tank capacity and construction materials.
- e. A schematic of the surface and subsurface construction details of the system showing location of all flow lines and pre-injection system.
- f. Plans for disposal of liquid, solid or semi-solid waste from the pre-injection treatment

system.

g. Detailed plans and specifications of all wellhead-associated facilities.

- 1) The wellhead-associated facilities should be diked to totally contain spillage and control run-on and run-off.
- 2) The areas (including loading, unloading, tanks, pumps, and filters) within the wellhead dike should be lined with an impervious material or reinforced concrete and drained to a sump, then routed to fluid holding facilities or returned to the process circuit.
- 3) All fluid pre-injection holding facilities should be aboveground tankage with adequate design strength and constructed of a material compatible with the injection fluid.
- 4) Process fluids or emergency storage facilities should be aboveground vessels or artificially lined ponds with adequate design strength and constructed of a material compatible with the injectate. If lined ponds are used, they shall have a leak detection system installed.
- 5) Ponds used for emergency storage during well maintenance or workover will not be used for any other purpose.

11. Other Subsurface Operations:

- a. Discussion of other injection or mining operations in the area, including names, distance from the proposed well, and the injection interval or mining interval.
- b. Hydrologic implications of proposed well as related to the existing operations.

12. Injection Well Operation:

- a. Expected maximum and average injection pressures.
- b. Calculated changes in reservoir pressures, formation fluid displacement, and direction(s) of dispersion of injected fluids.
- c. Describe provisions for continuous activities necessary for proper well maintenance and operation, and qualifications of personnel who will operate and supervise the injection well and related facilities.
- d. Proposed methods and schedule of mechanical integrity testing.
- e. Contingency plan and description of facilities to cope with well failures or shut-in

(Emergency Response Plan).

13. Representative background ground water analyses for the receiving aquifer and all USDW's in the area of review shall be provided from locations adjacent to and hydraulically down gradient and up gradient from the proposed injection well(s). The analyses shall include all parameters listed in the state Drinking Water Standards and Ground Water Quality Standards, and any additional parameter(s) of concern reasonably expected to be present in the injectate.

14. Plans (including maps) for meeting the following monitoring requirements:

- a. Monitoring wells shall be completed into the injection zone and into any USDW above or below the injection zone. Properly completed existing water wells may be utilized in meeting this requirement.*

Monitoring wells shall be completed in such locations hydraulically down-gradient from the injection well(s) as to detect the migration of injectate contaminants, injectate reaction products or formation fluids towards points of withdrawal or natural seepage (springs) of ground water.*

- b. Monitoring of ground water shall include, at a minimum, all State Drinking Water Standards, all State Ground Water Quality Standards and any additional parameters reasonably expected to be present in the injectate. Baseline analyses for these parameters shall be completed at all monitoring wells noted in (a) and submitted to the Division of Water Quality prior to injection well start-up. Indicate the proposed monitoring frequency.*
- c. Indicate the proposed parameters of injectate monitoring, to include at a minimum those noted in (b) above as well as injection pressure, volume and flow rate. Indicate the proposed frequency of injectate monitoring.

* NOTE: Ground water monitoring may not be required in all cases.

15. Proposed Well Plugging Abandonment Plan in the event of well failure or upon expiration of the project.

16. A certificate indicating that the applicant has assured, through a performance bond or other appropriate means, the resources necessary to close, plug, and abandon the wells. Include all calculations and results of all calculations used in determining the financial resources required.

Attachments

ARTIFICIAL PENETRATION REVIEW

Well (etc.) I.D. _____

Control: _____ Status _____

Operator: _____ State Forms: _____

Lease: _____ Distance from Injection Well: _____

Plugging Details

Well Diagram

POTENTIAL PROBLEM(S):

Applicable Federal Regulations

Information in this attachment does not represent a complete set of federal regulations governing underground injection activities. This information is provided to assist the applicant in preparing the Permit Application and in developing the information required in the Technical Report. A complete set of regulations is available in Title 40 of the Code of Federal Regulations (CFR). The most recent electronic publication of the CFR can be found at the following web site:

<http://www.access.gpo.gov/nara/cfr/cfr-table-search.html>

More recent updates are published in the Federal Register.

Code of Federal Regulations

Title 40, Volume 20

Revised as of July 1, 2003

TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY

PART 144_UNDERGROUND INJECTION CONTROL PROGRAM

Subpart D - Authorization by Permit

Sec. 144.31 Application for a permit; authorization by permit.

- (a) Permit application. Unless an underground injection well is authorized by rule under subpart C of this part, all injection activities including construction of an injection well are prohibited until the owner or operator is authorized by permit. An owner or operator of a well currently authorized by rule must apply for a permit under this section unless well authorization by rule was for the life of the well or project. Authorization by rule for a well or project for which a permit application has been submitted terminates for the well or project upon the effective date of the permit. Procedures for applications, issuance and administration of emergency permits are found exclusively in Sec. 144.34. A RCRA permit applying the standards of part 264, subpart C of this chapter will constitute a UIC permit for hazardous waste injection wells for which the technical standards in part 146 of this chapter are not generally appropriate.
- (b) Who applies? When a facility or activity is owned by one person but is operated by another person, it is the operator's duty to obtain a permit.
- (c) Time to apply. Any person who performs or proposes an underground injection for which a permit is or will be required shall submit an application to the Director in accordance with the UIC program as follows:
- (1) For existing wells, as expeditiously as practicable and in accordance with the schedule in any program description under Sec. 145.23(f) or (for EPA administered programs) on a schedule established by the Regional Administrator, but no later than 4 years from the approval or promulgation of the UIC program, or as required under Sec. 144.14(b) for wells injecting hazardous waste. For EPA administered programs the owner or operator of Class I or III wells shall submit a complete permit application no later than 1 year after the effective date of the program.
 - (2) For new injection wells, except new wells in projects authorized under Sec. 144.21(d) or authorized by an existing area permit under Sec. 144.33(c), a reasonable time before construction is expected to begin.
- (d) Completeness. The Director shall not issue a permit before receiving a complete application for a permit except for emergency permits. An application for a permit is complete when the Director receives an application form and any supplemental information which are completed to his or her satisfaction. The completeness of any application for a permit shall be judged independently of the status of any other permit application or permit for the same facility or activity. For

EPA-administered programs, an application which is reviewed under Sec. 124.3 is complete when the Director receives either a complete application or the information listed in a notice of deficiency.

(e) Information requirements. All applicants for permits shall provide the following information to the Director, using the application form provided by the Director.

(1) The activities conducted by the applicant which require it to obtain permits under RCRA, UIC, the National Pollution Discharge Elimination system (NPDES) program under the Clean Water Act, or the Prevention of Significant Deterioration (PSD) program under the Clean Air Act.

(2) Name, mailing address, and location of the facility for which the application is submitted.

(3) Up to four SIC codes which best reflect the principal products or services provided by the facility.

(4) The operator's name, address, telephone number, ownership status, and status as Federal, State, private, public, or other entity.

(5) Whether the facility is located on Indian lands.

(6) A listing of all permits or construction approvals received or applied for under any of the following programs:

(i) Hazardous Waste Management program under RCRA.

(ii) UIC program under SDWA.

(iii) NPDES program under CWA.

(iv) Prevention of Significant Deterioration (PSD) program under the Clean Air Act.

(v) Nonattainment program under the Clean Air Act.

(vi) National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the Clean Air Act.

(vii) Ocean dumping permits under the Marine Protection Research and Sanctuaries Act.

(viii) Dredge and fill permits under section 404 of CWA.

(ix) Other relevant environmental permits, including State permits.

(7) A topographic map (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the source depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment, storage, or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, and other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within a quarter mile of the facility property boundary.

(8) A brief description of the nature of the business.

(9) For EPA-administered programs, the applicant shall identify and submit on a list with the permit application the names and addresses of all owners of record of land within one-quarter mile of the facility boundary. This requirement may be waived by the Regional Administrator where the site is located in a populous area and the Regional Administrator determines that the requirement would be impracticable.

(10) A plugging and abandonment plan that meets the requirements of Sec. 146.10 of this chapter and is acceptable to the Director.

(f) Recordkeeping. Applicants shall keep records of all data used to complete permit applications and any supplemental information submitted under Sec. 144.31 for a period of at least 3 years from the date the application is signed.

(g) Information Requirements for Class I Hazardous Waste Injection Wells Permits.

- (1) The following information is required for each active Class I hazardous waste injection well at a facility seeking a UIC permit:
 - (i) Dates well was operated.
 - (ii) Specification of all wastes which have been injected in the well, if available.
- (2) The owner or operator of any facility containing one or more active hazardous waste injection wells must submit all available information pertaining to any release of hazardous waste or constituents from any active hazardous waste injection well at the facility.
- (3) The owner or operator of any facility containing one or more active Class I hazardous waste injection wells must conduct such preliminary site investigations as are necessary to determine whether a release is occurring, has occurred, or is likely to have occurred.

[48 FR 14189, Apr. 1, 1983, as amended at 49 FR 20185, May 11, 1984; 52 FR 45797, Dec. 1, 1987; 52 FR 46963, Dec. 10, 1987; 58 FR 63897, Dec. 3, 1993]

Sec. 144.32 Signatories to permit applications and reports.

(a) Applications. All permit applications, except those submitted for Class II wells (see paragraph (b) of this section), shall be signed as follows:

- (1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - (i) A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decisionmaking functions for the corporation, or
 - (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Note: EPA does not require specific assignments or delegations of authority to responsible corporate officers identified in Sec. 144.32(a)(1)(i). The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under Sec. 144.32(a)(1)(ii) rather than to specific individuals.

- (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
- (3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
 - (i) The chief executive officer of the agency, or
 - (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

(b) Reports. All reports required by permits, other information requested by the Director, and all permit applications submitted for Class II wells under Sec. 144.31 shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

- (1) The authorization is made in writing by a person described in paragraph (a) of this section;
- (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
- (3) The written authorization is submitted to the Director.

(c) Changes to authorization. If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

(d) Certification. Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(Clean Water Act (33 U.S.C. 1251 et seq.), Safe Drinking Water Act (42 U.S.C. 300f et seq.), Clean Air Act (42 U.S.C. 7401 et seq.), Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.)

[48 FR 14189, Apr. 1, 1983, as amended at 48 FR 39621, Sept. 1, 1983]

Sec. 144.38 Transfer of permits.

- (a) Transfers by modification. Except as provided in paragraph (b) of this section, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued (under Sec. 144.39(b)(2)), or a minor modification made (under Sec. 144.41(d)), to identify the new permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act.
- (b) Automatic transfers. As an alternative to transfers under paragraph (a) of this section, any UIC permit for a well not injecting hazardous waste may be automatically transferred to a new permittee if:
 - (1) The current permittee notifies the Director at least 30 days in advance of the proposed transfer date referred to in paragraph (b)(2) of this section;
 - (2) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer or permit responsibility, coverage, and liability between them, and the notice demonstrates that the financial responsibility requirements of Sec. 144.52(a)(7) will be met by the new permittee; and
 - (3) The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. A modification under this paragraph may also be a minor modification under Sec. 144.41. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph (b)(2) of this section.

Sec. 144.39 Modification or revocation and reissuance of permits.

When the Director receives any information (for example, inspects the facility, receives information submitted by the permittee as required in the permit (see Sec. 144.51 of this chapter), receives a request for modification or revocation and reissuance under Sec. 124.5, or conducts a review of the permit file) he or she may determine whether or not one or more of the causes listed in paragraphs (a) and (b) of this section for modification or revocation and reissuance or both exist. If cause exists, the Director may modify or revoke and reissue the permit accordingly, subject to the limitations of paragraph (c) of this section, and may request an updated application if necessary. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term. See Sec. 124.5(c)(2) of this chapter. If cause does not exist under this section or Sec. 144.41 of this chapter, the Director shall not modify or revoke and reissue the permit. If a permit modification satisfies the criteria in Sec. 144.41 for "minor modifications" the permit may be modified without a draft permit or public review. Otherwise, a draft permit must be prepared and other procedures in part 124 must be followed.

(a) Causes for modification. The following are causes for modification. For Class I hazardous waste injection wells, Class II, or Class III wells the following may be causes for revocation and reissuance as well as modification; and for all other wells the following may be cause for revocation or reissuance as well as modification when the permittee requests or agrees.

(1) Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

(2) Information. The Director has received information. Permits other than for Class II and III wells may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance. For UIC area permits (Sec. 144.33), this cause shall include any information indicating that cumulative effects on the environment are unacceptable.

(3) New regulations. The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued. Permits other than for Class I hazardous waste injection wells, Class II, or Class III wells may be modified during their terms for this cause only as follows:

(i) For promulgation of amended standards or regulations, when:

(A) The permit condition requested to be modified was based on a promulgated part 146 regulation; and

(B) EPA has revised, withdrawn, or modified that portion of the regulation on which the permit condition was based, and

(C) A permittee requests modification in accordance with Sec. 124.5 within ninety (90) days after Federal Register notice of the action on which the request is based.

(ii) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations if the remand and stay concern that portion of the regulations on which the permit condition was based and a request is filed by the permittee in accordance with Sec. 124.5 within ninety (90) days of judicial remand.

(4) Compliance schedules. The Director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy. See also Sec. 144.41(c) (minor modifications).

(b) Causes for modification or revocation and reissuance. The following are causes to modify or, alternatively, revoke and reissue a permit:

- (1) Cause exists for termination under Sec. 144.40, and the Director determines that modification or revocation and reissuance is appropriate.
- (2) The Director has received notification (as required in the permit, see Sec. 144.41(d)) of a proposed transfer of the permit. A permit also may be modified to reflect a transfer after the effective date of an automatic transfer (Sec. 144.38(b)) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new permittee.
- (3) A determination that the waste being injected is a hazardous waste as defined in Sec. 261.3 either because the definition has been revised, or because a previous determination has been changed.

(c) Facility siting. Suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.

[48 FR 14189, Apr. 1, 1983, as amended at 53 FR 28147, July 26, 1988]

Sec. 144.40 Termination of permits.

- (a) The Director may terminate a permit during its term, or deny a permit renewal application for the following causes:
- (1) Noncompliance by the permittee with any condition of the permit;
 - (2) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time; or
 - (3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;
- (b) The Director shall follow the applicable procedures in part 124 in terminating any permit under this section.

Sec. 144.41 Minor modifications of permits.

Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of part 124. Any permit modification not processed as a minor modification under this section must be made for cause and with part 124 draft permit and public notice as required in Sec. 144.39. Minor modifications may only:

- (a) Correct typographical errors;
- (b) Require more frequent monitoring or reporting by the permittee;
- (c) Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; or
- (d) Allow for a change in ownership or operational control of a facility where the Director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Director.
- (e) Change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the Director, would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification.
- (f) Change construction requirements approved by the Director pursuant to Sec. 144.52(a)(1) (establishing UIC permit conditions), provided that any such alteration shall comply with the requirements of this part and part 146.
- (g) Amend a plugging and abandonment plan which has been updated under Sec. 144.52(a)(6).

Subpart E - Permit Conditions

Sec. 144.51 Conditions applicable to all permits.

The following conditions apply to all UIC permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations (or the corresponding approved State regulations) must be given in the permit.

- (a) Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit under Sec. 144.34.
- (b) Duty to reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
- (c) Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (d) Duty to mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.
- (e) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.
- (f) Permit actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- (g) Property rights. This permit does not convey any property rights of any sort, or any exclusive privilege.
- (h) Duty to provide information. The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or

to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

(i) Inspection and entry. The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

- (1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- (4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA, any substances or parameters at any location.

(j) Monitoring and records.

- (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- (2) The permittee shall retain records of all monitoring information, including the following:
 - (i) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time; and
 - (ii) The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under Sec. 144.52(a)(6), or under part 146 subpart G as appropriate. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period. For EPA administered programs, the owner or operator shall continue to retain the records after the three year retention period unless he delivers the records to the Regional Administrator or obtains written approval from the Regional Administrator to discard the records.
- (3) Records of monitoring information shall include:
 - (i) The date, exact place, and time of sampling or measurements;
 - (ii) The individual(s) who performed the sampling or measurements;
 - (iii) The date(s) analyses were performed;
 - (iv) The individual(s) who performed the analyses;
 - (v) The analytical techniques or methods used; and
 - (vi) The results of such analyses.

(k) Signatory requirement. All applications, reports, or information submitted to the Administrator shall be signed and certified. (See Sec. 144.32.)

(l) Reporting requirements.

- (1) Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

- (2) Anticipated noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- (3) Transfers. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act. (See Sec. 144.38; in some cases, modification or revocation and reissuance is mandatory.)
- (4) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
- (5) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.
- (6) Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment, including:
 - (i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW; or
 - (ii) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs.

Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

- (7) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (l) (4), (5), and (6) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (l)(6) of this section.
 - (8) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.
- (m) Requirements prior to commencing injection. Except for all new wells authorized by an area permit under Sec. 144.33(c), a new injection well may not commence injection until construction is complete, and
- (1) The permittee has submitted notice of completion of construction to the Director; and
 - (2)
 - (i) The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or
 - (ii) The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in paragraph (m)(1) of this section, in which case prior inspection or review is waived and the permittee may commence injection. The Director shall include in his notice a reasonable time period in which he shall inspect the well.

- (n) The permittee shall notify the Director at such times as the permit requires before conversion or abandonment of the well or in the case of area permits before closure of the project.
- (o) A Class I, II or III permit shall include and a Class V permit may include, conditions which meet the applicable requirements of Sec. 146.10 of this chapter to insure that plugging and abandonment of the well will not allow the movement of fluids into or between USDWs. Where the plan meets the requirements of Sec. 146.10 of this chapter, the Director shall incorporate it into the permit as a permit condition. Where the Director's review of an application indicates that the permittee's plan is inadequate, the Director may require the applicant to revise the plan, prescribe conditions meeting the requirements of this paragraph, or deny the permit. For purposes of this paragraph, temporary or intermittent cessation of injection operations is not abandonment.
- (p) Plugging and abandonment report. For EPA-administered programs, within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a report to the Regional Administrator. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:
- (1) A statement that the well was plugged in accordance with the plan previously submitted to the Regional Administrator; or
 - (2) Where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the regional administrator, specifying the differences.
- (q) Duty to establish and maintain mechanical integrity.
- (1) The owner or operator of a Class I, II or III well permitted under this part shall establish prior to commencing injection or on a schedule determined by the Director, and thereafter maintain mechanical integrity as defined in Sec. 146.8 of this chapter. For EPA-administered programs, the Regional Administrator may require by written notice that the owner or operator comply with a schedule describing when mechanical integrity demonstrations shall be made.
 - (2) When the Director determines that a Class I, II, or III well lacks mechanical integrity pursuant to Sec. 146.8 of this chapter, he shall give written notice of his determination to the owner or operator. Unless the Director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the Director's determination. The Director may allow plugging of the well pursuant to the requirements of Sec. 146.10 of this chapter or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the Director that the owner or operator has demonstrated mechanical integrity pursuant to Sec. 146.8 of this chapter.
 - (3) The Director may allow the owner or operator of a well which lacks mechanical integrity pursuant to Sec. 146.8(a)(1) of this chapter to continue or resume injection, if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between USDWs.

[48 FR 14189, Apr. 1, 1983, as amended at 49 FR 20185, May 11, 1984; 53
FR 28147, July 26, 1988; 58 FR 63898, Dec. 3, 1993]

Sec. 144.52 Establishing permit conditions.

(a) In addition to conditions required in Sec. 144.51, the Director shall establish conditions, as required on a case-by-case basis under Sec. 144.36 (duration of permits), Sec. 144.53(a) (schedules of compliance), Sec. 144.54 (monitoring), and for EPA permits only Sec. 144.53(b) (alternate schedules of compliance), and Sec. 144.4 (considerations under Federal law). Permits for owners or operators of hazardous waste injection wells shall include conditions meeting the requirements of Sec. 144.14 (requirements for wells injecting hazardous waste), Sec. 144.52 (a)(7) and (a)(9), and subpart G of part 146. Permits for other wells shall contain the following requirements, when applicable.

- (1) Construction requirements as set forth in part 146. Existing wells shall achieve compliance with such requirements according to a compliance schedule established as a permit condition. The owner or operator of a proposed new injection well shall submit plans for testing, drilling, and construction as part of the permit application. Except as authorized by an area permit, no construction may commence until a permit has been issued containing construction requirements (see Sec. 144.11). New wells shall be in compliance with these requirements prior to commencing injection operations. Changes in construction plans during construction may be approved by the Administrator as minor modifications (Sec. 144.41). No such changes may be physically incorporated into construction of the well prior to approval of the modification by the Director.
- (2) Corrective action as set forth in Sec. Sec. 144.55 and 146.7
- (3) Operation requirements as set forth in 40 CFR part 146; the permit shall establish any maximum injection volumes and/or pressures necessary to assure that fractures are not initiated in the confining zone, that injected fluids do not migrate into any underground source of drinking water, that formation fluids are not displaced into any underground source of drinking water, and to assure compliance with the part 146 operating requirements.
- (4) Requirements for wells managing hazardous waste, as set forth in Sec. 144.14.
- (5) Monitoring and reporting requirements as set forth in 40 CFR part 146. The permittee shall be required to identify types of tests and methods used to generate the monitoring data. For EPA administered programs, monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in table I of 40 CFR 136.3 or in appendix III of 40 CFR part 261 or in certain circumstances by other methods that have been approved by the Regional Administrator.
- (6) After a cessation of operations of two years the owner or operator shall plug and abandon the well in accordance with the plan unless he:
 - (i) Provides notice to the Regional Administrator;
 - (ii) Describes actions or procedures, satisfactory to the Regional Administrator, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Regional Administrator.
- (7) Financial responsibility. (i) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the Director until:
 - (A) The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to Sec. Sec. 144.51(o) and 146.10 of this chapter, and submitted a plugging and abandonment report pursuant to Sec. 144.51(p); or

(B) The well has been converted in compliance with the requirements of Sec. 144.51(n); or

(C) The transferor of a permit has received notice from the Director that the owner or operator receiving transfer of the permit, the new permittee, has demonstrated financial responsibility for the well.

(ii) The permittee shall show evidence of such financial responsibility to the Director by the submission of a surety bond, or other adequate assurance, such as a financial statement or other materials acceptable to the Director. For EPA administered programs, the Regional Administrator may on a periodic basis require the holder of a lifetime permit to submit an estimate of the resources needed to plug and abandon the well revised to reflect inflation of such costs, and a revised demonstration of financial responsibility, if necessary. The owner or operator of a well injecting hazardous waste must comply with the financial responsibility requirements of subpart F of this part.

(8) Mechanical integrity. A permit for any Class I, II or III well or injection project which lacks mechanical integrity shall include, and for any Class V well may include, a condition prohibiting injection operations until the permittee shows to the satisfaction of the Director under Sec. 146.08 that the well has mechanical integrity.

(9) Additional conditions. The Director shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into underground sources of drinking water.

(b)

(1) In addition to conditions required in all permits the Director shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of the SDWA and parts 144, 145, 146 and 124.

(2) For a State issued permit, an applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of the permit. For a permit issued by EPA, an applicable requirement is a statutory or regulatory requirement (including any interim final regulation) which takes effect prior to the issuance of the permit. Section 124.14 (reopening of comment period) provides a means for reopening EPA permit proceedings at the discretion of the Director where new requirements become effective during the permitting process and are of sufficient magnitude to make additional proceedings desirable. For State and EPA administered programs, an applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit, to the extent allowed in Sec. 144.39.

(3) New or reissued permits, and to the extent allowed under Sec. 144.39 modified or revoked and reissued permits, shall incorporate each of the applicable requirements referenced in Sec. 144.52.

(c) Incorporation. All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.

[48 FR 14189, Apr. 1, 1983, as amended at 49 FR 20185, May 11, 1984; 53 FR 28147, July 26, 1988; 58 FR 63898; Dec. 3, 1993; 65 FR 30913, May 15, 2000]

Sec. 144.53 Schedule of compliance.

- (a) General. The permit may, when appropriate, specify a schedule of compliance leading to compliance with the SDWA and parts 144, 145, 146, and 124.
- (1) Time for compliance. Any schedules of compliance shall require compliance as soon as possible, and in no case later than 3 years after the effective date of the permit.
 - (2) Interim dates. Except as provided in paragraph (b)(1)(ii) of this section, if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.
 - (i) The time between interim dates shall not exceed 1 year.
 - (ii) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.
 - (3) Reporting. The permit shall be written to require that if paragraph (a)(1) of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.
- (b) Alternative schedules of compliance. A permit applicant or permittee may cease conducting regulated activities (by plugging and abandonment) rather than continue to operate and meet permit requirements as follows:
- (1) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:
 - (i) The permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or
 - (ii) The permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.
 - (2) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.
 - (3) If the permittee is undecided whether to cease conducting regulated activities, the Director may issue or modify a permit to contain two schedules as follows:
 - (i) Both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;
 - (ii) One schedule shall lead to timely compliance with applicable requirements;
 - (iii) The second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements;
 - (iv) Each permit containing two schedules shall include a requirement that after the permittee has made a final decision under paragraph (b)(3)(i) of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.
 - (4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Director, such as a resolution of the board of directors of a corporation.

Sec. 144.54 Requirements for recording and reporting of monitoring results.

All permits shall specify:

- (a) Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);
- (b) Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring;
- (c) Applicable reporting requirements based upon the impact of the regulated activity and as specified in part 146. Reporting shall be no less frequent than specified in the above regulations.

Sec. 144.55 Corrective action.

(a) Coverage. Applicants for Class I, II, (other than existing), or III injection well permits shall identify the location of all known wells within the injection well's area of review which penetrate the injection zone, or in the case of Class II wells operating over the fracture pressure of the injection formation, all known wells within the area of review penetrating formations affected by the increase in pressure. For such wells which are improperly sealed, completed, or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water ("corrective action"). Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based on the factors in Sec. 146.07), the Director shall require the applicant to revise the plan, prescribe a plan for corrective action as a condition of the permit under paragraph (b) of this section, or deny the application. The Director may disregard the provisions of Sec. 146.06 (Area of Review) and Sec. 146.07 (Corrective Action) when reviewing an application to permit an existing Class II well.

(b) Requirements—

- (1) Existing injection wells. Any permit issued for an existing injection well (other than Class II) requiring corrective action shall include a compliance schedule requiring any corrective action accepted or prescribed under paragraph (a) of this section to be completed as soon as possible.
- (2) New injection wells. No owner or operator of a new injection well may begin injection until all required corrective action has been taken.
- (3) Injection pressure limitation. The Director may require as a permit condition that injection pressure be so limited that pressure in the injection zone does not exceed hydrostatic pressure at the site of any improperly completed or abandoned well within the area of review. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation can be part of a compliance schedule and last until all other required corrective action has been taken.
- (4) Class III wells only. When setting corrective action requirements the Director shall consider the overall effect of the project on the hydraulic gradient in potentially affected USDWs, and the corresponding changes in potentiometric surface(s) and flow direction(s) rather than the discrete effect of each well. If a decision is made that corrective action is not necessary based on the determinations above, the monitoring program required in Sec. 146.33(b) shall be designed to verify the validity of such determinations.

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TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY

PART 146_UNDERGROUND INJECTION CONTROL PROGRAM: CRITERIA AND STANDARDS

Subpart B - Criteria and Standards Applicable to Class I Wells

Sec. 146.11 Criteria and standards applicable to Class I nonhazardous wells.

This subpart establishes criteria and standards for underground injection control programs to regulate Class I nonhazardous wells.

Sec. 146.12 Construction requirements.

- (a) All Class I wells shall be sited in such a fashion that they inject into a formation which is beneath the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.
- (b) All Class I wells shall be cased and cemented to prevent the movement of fluids into or between underground sources of drinking water. The casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well. In determining and specifying casing and cementing requirements, the following factors shall be considered:
 - (1) Depth to the injection zone;
 - (2) Injection pressure, external pressure, internal pressure, and axial loading;
 - (3) Hole size;
 - (4) Size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material);
 - (5) Corrosiveness of injected fluid, formation fluids, and temperatures;
 - (6) Lithology of injection and confining intervals; and
 - (7) Type or grade of cement.
- (c) All Class I injection wells, except those municipal wells injecting non-corrosive wastes, shall inject fluids through tubing with a packer set immediately above the injection zone, or tubing with an approved fluid seal as an alternative. The tubing, packer, and fluid seal shall be designed for the expected service.
 - (1) The use of other alternatives to a packer may be allowed with the written approval of the Director. To obtain approval, the operator shall submit a written request to the Director, which shall set forth the proposed alternative and all technical data supporting its use. The Director shall approve the request if the alternative method will reliably provide a

comparable level of protection to underground sources of drinking water. The Director may approve an alternative method solely for an individual well or for general use.

(2) In determining and specifying requirements for tubing, packer, or alternatives the following factors shall be considered:

- (i) Depth of setting;
- (ii) Characteristics of injection fluid (chemical content, corrosiveness, and density);
- (iii) Injection pressure;
- (iv) Annular pressure;
- (v) Rate, temperature and volume of injected fluid; and
- (vi) Size of casing.

(d) Appropriate logs and other tests shall be conducted during the drilling and construction of new Class I wells. A descriptive report interpreting the results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the Director. At a minimum, such logs and tests shall include:

(1) Deviation checks on all holes constructed by first drilling a pilot hole, and then enlarging the pilot hole by reaming or another method. Such checks shall be at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling.

(2) Such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information, that may arise from time to time as the construction of the well progresses. In determining which logs and tests shall be required, the following logs shall be considered for use in the following situations:

(i) For surface casing intended to protect underground sources of drinking water:

- (A) Resistivity, spontaneous potential, and caliper logs before the casing is installed; and
- (B) A cement bond, temperature, or density log after the casing is set and cemented.

(ii) For intermediate and long strings of casing intended to facilitate injection:

- (A) Resistivity, spontaneous potential, porosity, and gamma ray logs before the casing is installed;
- (B) Fracture finder logs; and
- (C) A cement bond, temperature, or density log after the casing is set and cemented.

(e) At a minimum, the following information concerning the injection formation shall be determined or calculated for new Class I wells:

- (1) Fluid pressure;
- (2) Temperature;
- (3) Fracture pressure;
- (4) Other physical and chemical characteristics of the injection matrix; and
- (5) Physical and chemical characteristics of the formation fluids.

[45 FR 42500, June 24, 1980, as amended at 46 FR 43162, Aug. 27, 1981]

Sec. 146.13 Operating, monitoring and reporting requirements.

(a) Operating requirements. Operating requirements shall at a minimum, specify that:

- (1) Except during stimulation injection pressure at the wellhead shall not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. In no case shall injection pressure initiate fractures in the confining zone or cause the movement of injection or formation fluids into an underground source of drinking water.
- (2) Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited.
- (3) Unless an alternative to a packer has been approved under Sec. 146.12(c), the annulus between the tubing and the long string of casings shall be filled with a fluid approved by the Director and a pressure, also approved by the Director, shall be maintained on the annulus.

(b) Monitoring requirements. Monitoring requirements shall, at a minimum, include:

- (1) The analysis of the injected fluids with sufficient frequency to yield representative data of their characteristics;
- (2) Installation and use of continuous recording devices to monitor injection pressure, flow rate and volume, and the pressure on the annulus between the tubing and the long string of casing;
- (3) A demonstration of mechanical integrity pursuant to Sec. 146.8 at least once every five years during the life of the well; and
- (4) The type, number and location of wells within the area of review to be used to monitor any migration of fluids into and pressure in the underground sources of drinking water, the parameters to be measured and the frequency of monitoring.

(c) Reporting requirements. Reporting requirements shall, at a minimum, include:

- (1) Quarterly reports to the Director on:
 - (i) The physical, chemical and other relevant characteristics of injection fluids;
 - (ii) Monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure; and
 - (iii) The results of monitoring prescribed under paragraph (b)(4) of this section.
- (2) Reporting the results, with the first quarterly report after the completion, of:
 - (i) Periodic tests of mechanical integrity;
 - (ii) Any other test of the injection well conducted by the permittee if required by the Director; and
 - (iii) Any well work over.

(d) Ambient monitoring.

- (1) Based on a site-specific assessment of the potential for fluid movement from the well or injection zone and on the potential value of monitoring wells to detect such movement, the Director shall require the owner or operator to develop a monitoring program. At a minimum, the Director shall require monitoring of the pressure buildup in the injection zone annually, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

(2) When prescribing a monitoring system the Director may also require:

- (i) Continuous monitoring for pressure changes in the first aquifer overlying the confining zone. When such a well is installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the Director;
- (ii) The use of indirect, geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the Director, or to provide other site specific data;
- (iii) Periodic monitoring of the ground water quality in the first aquifer overlying the injection zone;
- (iv) Periodic monitoring of the ground water quality in the lowermost USDW; and
- (v) Any additional monitoring necessary to determine whether fluids are moving into or between USDWs.

[45 FR 42500, June 24, 1980, as amended at 46 FR 43162, Aug. 27, 1981;
47 FR 32129, July 26, 1982; 53 FR 28148, July 26, 1988]

Sec. 146.14 Information to be considered by the Director.

This section sets forth the information which must be considered by the Director in authorizing Class I wells. For an existing or converted new Class I well the Director may rely on the existing permit file for those items of information listed below which are current and accurate in the file. For a newly drilled Class I well, the Director shall require the submission of all the information listed below. For both existing and new Class I wells certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application by reference provided they are current, readily available to the Director (for example, in the permitting agency's files) and sufficiently identified to be retrieved. In cases where EPA issues the permit all the information in this section must be submitted to the Administrator.

- (a) Prior to the issuance of a permit for an existing Class I well to operate or the construction or conversion of a new Class I well the Director shall consider the following:
- (1) Information required in 40 CFR 144.31 and 144.31(g);
 - (2) A map showing the injection well(s) for which a permit is sought and the applicable area of review. Within the area of review, the map must show the number, or name, and location of all producing wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features including residences and roads. The map should also show faults, if known or suspected. Only information of public record is required to be included on this map;
 - (3) A tabulation of data on all wells within the area of review which penetrate into the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the Director may require;
 - (4) Maps and cross sections indicating the general vertical and lateral limits of all underground sources of drinking water within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each underground source of drinking water which may be affected by the proposed injection;
 - (5) Maps and cross sections detailing the geologic structure of the local area;
 - (6) Generalized maps and cross sections illustrating the regional geologic setting;
 - (7) Proposed operating data:
 - (i) Average and maximum daily rate and volume of the fluid to be injected;
 - (ii) Average and maximum injection pressure; and
 - (iii) Source and an analysis of the chemical, physical, radiological and biological characteristics of injection fluids;
 - (8) Proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the receiving formation;
 - (9) Proposed stimulation program;
 - (10) Proposed injection procedure;
 - (11) Schematic or other appropriate drawings of the surface and subsurface construction details of the well.
 - (12) Contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any underground source of drinking water;
 - (13) Plans (including maps) for meeting the monitoring requirements in Sec. 146.13(b);
 - (14) For wells within the area of review which penetrate the injection zone but are not properly completed or plugged, the corrective action proposed to be taken under 40 CFR 144.55;

- (15) Construction procedures including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program; and
 - (16) A certificate that the applicant has assured, through a performance bond or other appropriate means, the resources necessary to close, plug or abandon the well as required by 40 CFR 122.42(g).
- (b) Prior to granting approval for the operation of a Class I well the Director shall consider the following information:
- (1) All available logging and testing program data on the well;
 - (2) A demonstration of mechanical integrity pursuant to Sec. 146.8;
 - (3) The anticipated maximum pressure and flow rate at which the permittee will operate;
 - (4) The results of the formation testing program;
 - (5) The actual injection procedure;
 - (6) The compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone; and
 - (7) The status of corrective action on defective wells in the area of review.
- (c) Prior to granting approval for the plugging and abandonment of a Class I well the Director shall consider the following information:
- (1) The type and number of plugs to be used;
 - (2) The placement of each plug including the elevation of the top and bottom;
 - (3) The type and grade and quantity of cement to be used;
 - (4) The method for placement of the plugs; and
 - (5) The procedure to be used to meet the requirement of Sec. 146.10(c).

(Clean Water Act, Safe Drinking Water Act, Clean Air Act, Resource
Conservation and Recovery Act: 42 U.S.C. 6905, 6912, 6925, 6927, 6974)

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48 FR 14293, Apr. 1, 1983]